

**2018 Pre-Budget
Consultation
Submission**



Executive Summary

Canada can achieve leadership in the low-carbon economy through investments in:

1. Adopting zero-carbon building standards for all new federal government-owned buildings and all commercial, institutional and multi-unit residential buildings (MURBs) that receive funding through federal programs;
2. Creating roadmaps for targeted retrofit investments in each jurisdiction for federal government-owned buildings and federally-funded commercial, institutional and MURB retrofits; and
3. Building investor confidence in the retrofit economy in the commercial, institutional and multi-unit residential real estate sector.

These actions, which are technically feasible and financially viable, will help Canada achieve its target for 30% reduction in greenhouse gas emissions (GHGs) by 2030 (from 2005 levels) and transition to a low-carbon economy. They will establish Canadian excellence in green building innovation, growing the economy through job creation, global investment and increased productivity.

Introduction

The Canada Green Building Council (CaGBC) is the only national, industry-led, non-profit organization dedicated to green building. Our in-depth market research and analysis, building certification program, and capacity building efforts have accelerated the transformation to high-performing green buildings, homes and communities throughout Canada.

CaGBC commends the Government of Canada for its leadership towards a low-carbon economy. Innovative policies, like labelling building energy performance, retrofit codes, and low-cost financing for retrofits, will move the sector forward.

The *Pan-Canadian Framework on Clean Growth and Climate Change* provides a pathway to reach Canada's environmental goals. The Low Carbon Economy Fund will leverage projects that generate growth and reduce GHG emissions. Both initiatives recognize the building sector as critical to Canada's transformation to a low-carbon economy, GHG emissions reduction and economic growth.

Business expenditures in research and development are foundational to establishing the low-carbon economy; however, declining productivity has slowed progress in R&D over the last thirty years. In Canada, construction ranks at the bottom of all industries for R&D expenditures ([CaGBC](#), 2016). Ineffective price signals, lack of access to de-risked finance, and an absence of policies to support market development have hampered productivity and growth. We must reverse this trend.

The building sector presents an exceptional opportunity to reduce GHG emissions drastically at the lowest cost, while developing the economy ([UNEP](#), 2009). Canada's green building sector is one of the most advanced in the world and is well-positioned to drive the transformation to the low-carbon economy ([ACEEE](#), 2016).

Commercial and institutional buildings provide the largest area of improvement for building energy efficiency and low-carbon performance with long-term returns on investment (ROI) ([CaGBC](#), 2016). Improvements in the energy efficiency of MURBs, which on average have a 20% greater energy footprint than single-family homes, also support affordability goals for low-income Canadians (Kesik and Saleff, 2009).

Recommendations

Budget 2018 can highlight the government's plan for a low-carbon economy by implementing initiatives that are technically feasible, financially viable, and provide clear social and economic benefits.

The federal government should focus on two areas to drive innovation and create a world-class building sector in Canada by:

- Providing a path for new buildings to reach zero-carbon and higher energy efficiency levels; and
- Creating the conditions to scale-up and accelerate retrofits of existing buildings by developing the market infrastructure for the retrofit economy.

A pan-Canadian strategy, that includes the following components, is required to stimulate market growth:

1. Adopting zero-carbon building standards for all new federal government-owned buildings and all commercial, institutional and multi-unit residential buildings (MURBs) that receive funding through federal programs;
2. Creating roadmaps for targeted retrofit investments in each jurisdiction for federal government-owned buildings and federally-funded commercial, institutional and MURB retrofits; and
3. Building investor confidence in Canada's retrofit economy in the commercial, institutional and residential real estate sector.

Low- and zero-carbon technology for new and existing buildings is available and deployed in the market today, in the form of high efficient heat pumps, geo-thermal systems, high-performance glazing, and on-site photo-voltaic energy systems. The costs for these technologies have decreased dramatically, providing an opportunity for Canadians and Canadian businesses to switch to low carbon fuel sources and reduce energy costs.

Recommendation 1: Adopt Zero-Carbon Building Standards for All New Buildings

Zero-carbon buildings are the next frontier of the low-carbon economy and will future-proof Canada's building stock in a carbon constrained economy. If all new large buildings over 25,000 ft² were built to achieve net zero-carbon performance between now and 2030, Canada could reduce emissions from the sector by 17% (from 2005 levels), or 7.5 megatonnes (Mt) annually by 2030 ([CaGBC, 2016](#)).

To succeed, Canada must develop a clear path for new buildings to reach zero-carbon. CaGBC is positioning Canada to lead the global zero-carbon movement with the development of a unique, made-in-Canada solution for assessing the carbon performance of commercial, institutional, and multi-family buildings in Canada.

With CaGBC's Zero-Carbon Building Standard, Canada joins an elite group of countries, including Australia, Germany, Netherlands, Switzerland, UK and US, who are showing leadership in carbon reduction in buildings. Launched in May 2017, CaGBC is piloting the standard with sixteen projects, including one in partnership with the federal government ([CaGBC, 2017](#)).

By adopting the Zero-Carbon Standard for new owned or leased federal buildings, along with an updated LEED Platinum policy, the federal government would signal leadership to the provinces, territories and private sector building owners. This will drive uptake in the commercial and institutional market. The EU took a similar leadership path, mandating member states must require new public buildings to be nearly zero-energy by 2018, and new buildings to be zero-energy by the end of 2020 ([European Commission, 2017](#)).

As Canada's largest landowner and purchaser of goods and services, the federal government could deploy its purchasing power to buy zero-carbon technology in bulk, accelerating the commercial development of these goods and services. Bulk purchasing could stimulate the integration of zero-carbon technology into buildings by lowering price points and demonstrating confidence in these solutions for industry. This would create more conducive conditions for widespread market adoption of

zero-carbon technology in Canada and export opportunities for innovative Canadian solutions.

CaGBC proposes to work with the federal government to adopt the Zero-Carbon Building Standard as a third-party certification in new federal buildings.

Recommendation #2: Create Roadmaps for Targeted Federal Investments in Retrofits

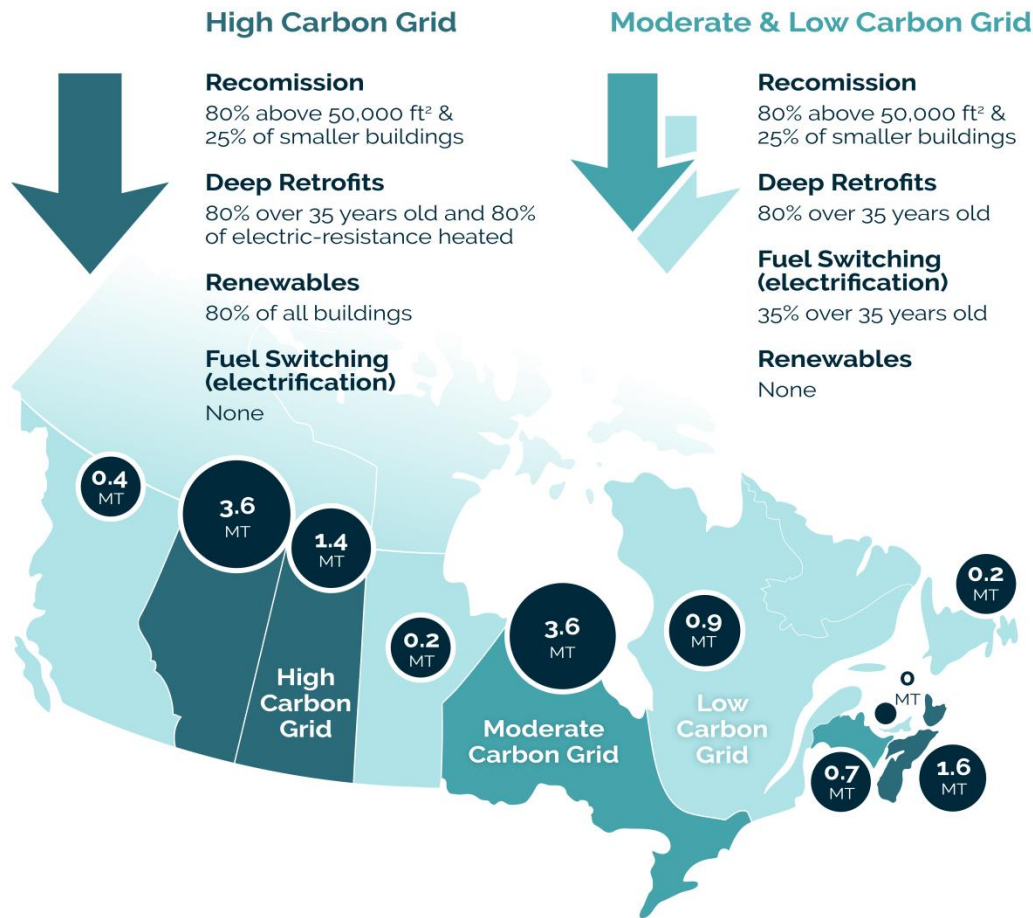
With over 80% of existing buildings still in operation in 2030 and 50% in 2050, retrofitting existing buildings provides the greatest opportunity to meet 2030 targets for the building sector ([CaGBC, 2009](#)).

CaGBC's *Building Solutions to Climate Change* report (2016) recommends four initiatives to implement for public and private sector buildings over 25,000 ft² to contribute to Canada's 2030 emissions target.

1. Optimize performance in the 80% of buildings that are not yet highly efficient through retrofitting or recommissioning;
2. Undertake deep retrofits in 60% of buildings to high-performance standards such as LEED, focusing on energy reduction and upgrading key building systems;
3. Incorporate solar or on-site renewable energy systems for 40% of buildings; and
4. Switch to low-carbon fuel sources in 20% of buildings.

Undertaking these initiatives will result in a 39% reduction overall in carbon emissions, surpassing Canada's reduction commitment. The goal will only be achieved by implementing these initiatives in a strategic manner following targeted retrofit roadmaps.

No two jurisdictions are alike. The success/failure of carbon reduction activities will depend on unique factors related to region and existing building type, size, and age, and most importantly, the carbon-intensity of heating sources and electricity grids. For example, the size of Ontario's building sector and the carbon intensity of Alberta's grid mean that their large buildings emit the most carbon and have the greatest potential to reduce emissions, but will require tailored reduction initiatives. Even Quebec, which has low-carbon grids, will need to prioritize fuel switching to ensure its building stock displaces natural gas for heating.



(CaGBC's *A Roadmap for Retrofits in Canada*, 2017)

The Low Carbon Economy Fund and future funding programs should deploy retrofit roadmaps to yield the highest impact for carbon reductions by focusing on commercial, institutional and MURB building retrofits. To achieve the highest economic and environmental ROI, CaGBC proposes to work with federal, provincial and territorial governments to develop roadmaps in each jurisdiction for retrofit projects for buildings over 25,000 ft² that are federal government-owned, or commercial, institutional buildings and MURBs that receive federal funding.

Implementing the initiatives outlined above would drive innovation and the commercialization of products and services; increase the purchase of advanced technology and equipment; and create opportunities for labour market participation in Canada's low-carbon economy through job growth. In the short-term, manufacturing, installation and construction jobs would be created. Advisory sector jobs in architecture, consulting and engineering would also see growth. Sixteen industry sectors across the supply chain in Canada would be directly stimulated by this strategy (CaGBC, 2016).

The estimated net present value of all GDP impacts from implementing these initiatives would be \$261 billion. Employment gains from building upgrades are anticipated to average 260,741 equivalent full-time jobs annually. By 2030, retrofit activity could generate \$5.2 billion in taxes accruing to all orders of government (CaGBC, 2016).

Recommendation #3: Build Investor Confidence in Canada's Retrofit Economy

Canada's building sector continues to experience market stagnation in deep retrofits and carbon reduction activities. The federal government can help to break down barriers and accelerate the growth of Canada's retrofit economy.

A mature retrofit ecosystem creates symbiotic relationships amongst key players that are critical to identifying, qualifying, funding/financing, delivering, and managing projects. In Canada, the retrofit ecosystem is stunted by limited access to financing, low investor confidence in performance outcomes and high transaction costs. With no standardized measure for certifying the ROI from a building retrofit or evaluating project risks, securitization is difficult for Canadian banks and financiers.

Canada can demonstrate leadership by joining the EU and US in adopting the [Investor Confidence Project](#) (ICP) as a best practice to unleash investment and support the existing building retrofit market. The ICP is a standardized framework for risk assessment and verification of building retrofits that provides commercial investors and building owners with confidence in project engineering, performance outcomes and financial returns. The ICP reduces project complexity, cuts high transaction costs and builds confidence among the investor community, akin to ratings agencies for bond investors.

CaGBC is currently piloting the ICP for Canada, in partnership with MaRS ([Advanced Energy Centre](#), 2016). CaGBC proposes to work with the federal government to deploy the ICP for all federally-funded commercial, institutional and MURB building retrofits. The federal government should embed the ICP as a requirement within the Low Carbon Economy Fund, the Canada Infrastructure Bank and the National Housing Strategy.

The ICP will unlock and rapidly deploy private capital for building retrofits by providing tools and processes to ensure infrastructure projects are shovel-ready for public and private sector investors. It would build up the sizable mid-market and enable beneficial financing terms for project proponents by ensuring the environmental and economic targets for retrofits can be achieved.

Conclusion

CaGBC is presenting recommendations focused on driving the transformation to a low-carbon economy and contributing to economic growth while mitigating the effects of climate change.

The proposed green building initiatives secure economic and environmental benefits that extend across the Canadian economy by spurring innovation within Canadian companies and further developing expertise and technology in Canada's green building and clean tech sectors. These developments will enable the growth of Canadian Small and Medium Enterprises, creating export opportunities for Canadian technology and expertise in green building in the growing global green building marketplace.

CaGBC will continue to provide the federal government with thought leadership and solutions to grow the low-carbon economy, realize economic benefits and GHG reductions from the building sector.